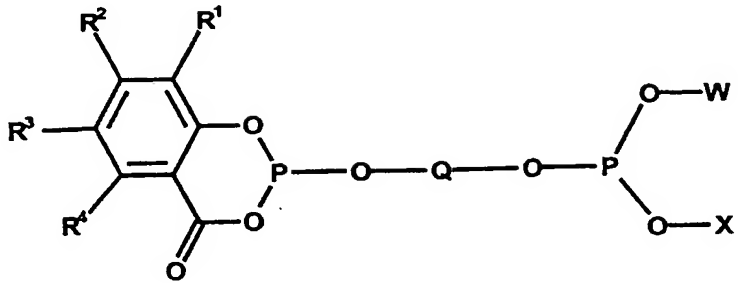
Claims:

1. A process for preparing bisphosphites of the formula I



(I)

where R^1, R^2, R^3, R^4 are each H or an aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms, F, Cl, Br, I, $-CF_3$, $-OR^7$, $-COR^7$, $-CO_2R^7$, $-CO_2M$, $-SR_7$, $-SO_2R^7$, $-SOR^7$, $-SO_3R^7$, $-SO_3M$, $-SO_2NR^7R^8$, NR^7R^8, $N{=}CR^7R^8$, NH_2, where R^1 to R^4 are identical or different and may be covalently linked to one another,

R^7, R^8 are each H or a substituted or unsubstituted, aliphatic or aromatic hydrocarbon radical having from 1 to 25 carbon atoms and are identical or different,

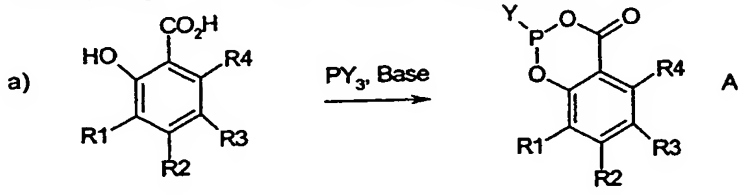
M is an alkali metal ion, alkaline earth metal ion, ammonium ion, phosphonium ion,

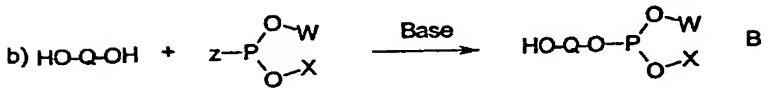
Q is a divalent aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms,

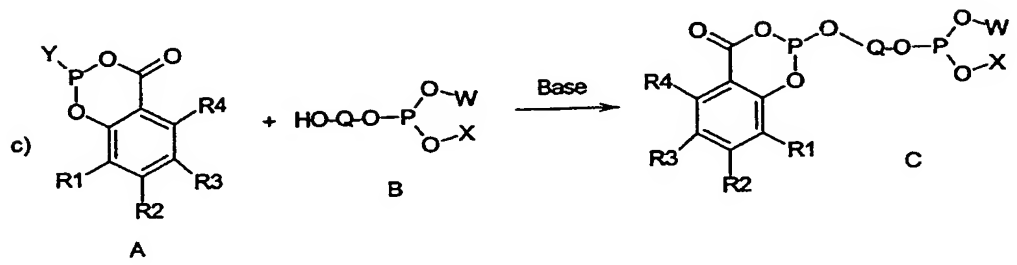
Z, Y are each Cl, Br, I,

W, X are each an aliphatic, alicyclic, aliphatic-alicyclic, heterocylic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms and may be identical or different or be

covalently linked to one another, which comprises carrying out the reaction sequence







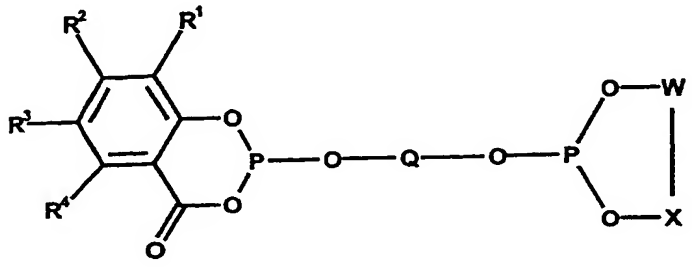
wherein the reaction steps a), b) and c) are carried out in aprotic and nonpolar solvents, the adduct base • HY or base • HZ is filtered off after at least one of the reaction steps a), b) and c) and first the end product is isolated and purified.

2. The process as claimed in claim 1, wherein tertiary amines are used as base.

3. The process as claimed in claim 1 or 2, wherein benzene, toluene, ethylbenzene, cyclohexane are used as aprotic and nonpolar solvent.

4. The process as claimed in any of claims 1 to 3, wherein W and X are each an aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic,

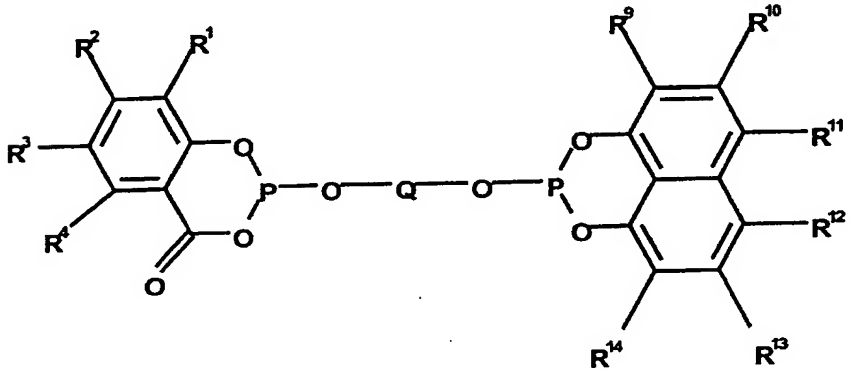
aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms and are covalently linked as in the formula V



(V)

where R^1, R^2, R^3, R^4 and Q are as defined in claim 1 and subject to the provisos therein.

5. The process as claimed in any of claims 1 to 3, wherein W and X are each an aromatic hydrocarbon radical having from 1 to 50 carbon atoms and are covalently linked as shown in the formula VI



(VI)

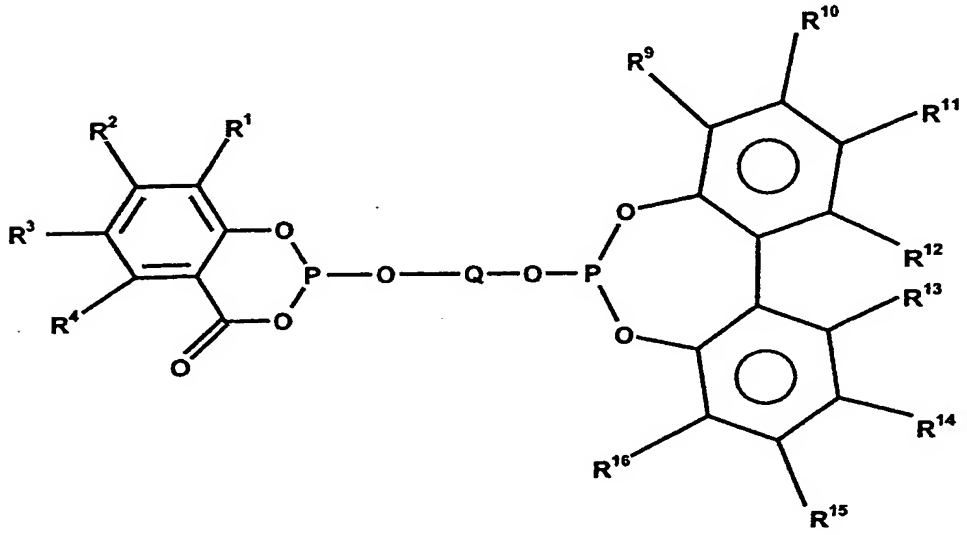
where R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14} are each H or an aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic-aromatic, aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms, F, Cl, Br, I, $-CF_3$, $-OR^{25}$, $-COR^{25}$, $-CO_2R^{25}$, $-CO_2M$, $-SR^{25}$, $-SO_2R^{25}$, $-SOR^{25}$, $-SO_3R^{25}$, $-SO_3M$, $-SO_2NR^{25}R^{26}$, $NR^{25}R^{26}$, $N=CR^{25}R^{26}$, NH_2, where R^9 to R^{14} are identical or different and may be covalently linked to one another.

R^{25} and R^{26} are each H or a substituted or unsubstituted, aliphatic or aromatic hydrocarbon radical having from 1 to 25 carbon atoms and may be identical or different,

M is an alkali metal ion, alkaline earth metal ion, ammonium ion, phosphonium ion and

R^1, R^2, R^3, R^4 and Q are as defined in claim 1 and subject to the provisos therein.

6. The process as claimed in any of claims 1 to 3, wherein W and X are each an aromatic hydrocarbon radical having from 1 to 50 carbon atoms and are covalently linked as shown in the formula VII



(VII)

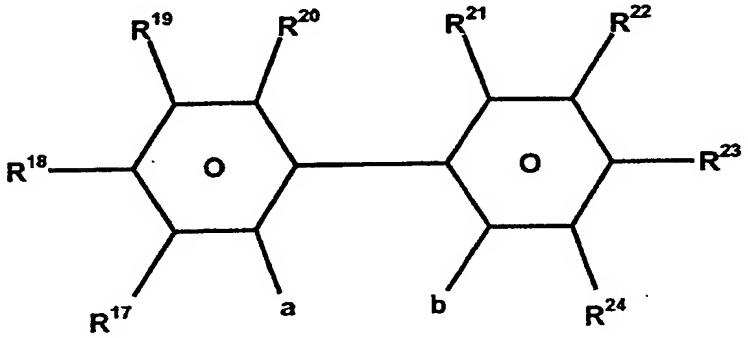
where R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16} are each H or an aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic-aromatic, aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms, F, Cl, Br, I, $-CF_3$, $-OR^{25}$, $-COR^{25}$, $-CO_2R^{25}$, $-CO_2M$, $-SR^{25}$, $-SO_2R^{25}$, $-SOR^{25}$, $-SO_3R^{25}$, $-SO_3M$, $-SO_2NR^{25}R^{26}$, $NR^{25}R^{26}$, $N{=}CR^{25}R^{26}$, NH_2, where R^9 to R^{16} are identical or different and may be covalently linked to one another,

R^{25} and R^{26} are each H or a substituted or unsubstituted, aliphatic or aromatic hydrocarbon radical having from 1 to 25 carbon atoms and may be identical or different,

M is an alkali metal ion, alkaline earth metal ion, ammonium ion, phosphonium ion and

R^1, R^2, R^3, R^4 and Q are as defined in claim 1 and subject to the provisos therein.

7. The process as claimed in any of claims 1 to 6, wherein Q is a hydrocarbon radical of the formula VIII



(VIII)

where R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} are each H or an aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic-aromatic, aromatic, aliphatic-aromatic hydrocarbon radical having from 1 to 50 carbon atoms, F, Cl, Br, I, $-CF_3$, $-OR^{25}$, $-COR^{25}$, $-CO_2R^{25}$, $-CO_2M$, $-SR^{25}$, $-SO_2R^{25}$, $-SOR^{25}$, $-SO_3R^{25}$, $-SO_3M$, $-SO_2NR^{25}R^{26}$, $NR^{25}R^{26}$, $N=CR^{25}R^{26}$, NH_2, where R^{17} to R^{24} are identical or different and may be covalently linked to one another,

R^{25} and R^{26} are each H or a substituted or unsubstituted, aliphatic or aromatic hydrocarbon radical having from 1 to 25 carbon atoms,

M is an alkali metal ion, alkaline earth metal ion, ammonium ion, phosphonium ion

with the positions a and b serving as linkage points.

8. The process as claimed in any of claims 1 to 7, wherein X and W are covalently linked and the corresponding starting material used in reaction step c) is prepared according to reaction step d) in an aprotic and nonpolar solvent

d)